



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/589,636	06/07/2000	Tuc Nguyen	SIM013	8595

23910 7590 09/21/2004

FLIESLER MEYER, LLP  
FOUR EMBARCADERO CENTER  
SUITE 400  
SAN FRANCISCO, CA 94111

EXAMINER
----------

KERNS, KEVIN P

ART UNIT	PAPER NUMBER
----------	--------------

1725

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/589,636	<b>Applicant(s)</b> NGUYEN, TUE	
	<b>Examiner</b> Kevin P. Kerns	<b>Art Unit</b> 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2004 and 03 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,10-13,15-17,20,22 and 23 is/are rejected.
- 7) ☒ Claim(s) 1,3,9,15,18,19,21 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>6/28/04</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: on page 3, 1<sup>st</sup> line of the amended specification, "the" should be deleted before "use". Appropriate correction is required.

### ***Claim Objections***

2. Claims 1 and 15 are objected to because of the following informalities: in claim 1, 6<sup>th</sup> line from the end of the claim, "adpated" should be changed to "adapted". In claim 15, 1<sup>st</sup> line, "collected" should be changed to "collect". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 4-8, 15-17, 20, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitt et al. (US 6,099,649).

Schmitt et al. disclose a chemical vapor deposition trapping system for unreacted precursor conversion and effluent removal, in which the trapping system includes the

following structures (in order from upstream to downstream): a process chamber (14,521), a hot trap 16, a heater power supply 26 for heating the foreline 20, a vacuum pump 22 with associated heater 24 (alternatively, with pump 22 being self-heated in one embodiment), one or more cold traps (28,501,513) being downstream from the hot trap 16 in both embodiments, a burn box 30, and a plurality of valves (505,511,515,517,525) operable to isolate and/or divert flow through either, both, or none of the cold traps (abstract; column 1, lines 6-10; column 2, lines 11-25 and 53-63; column 4, lines 20-62; column 5, lines 57-67; column 6, lines 1-67; column 7, lines 1-42; and Figures 1 and 4-6). Although not specifically disclosed by Schmitt et al., one of ordinary skill in the art would have recognized that the use of a burn box as another hot trap (being downstream from the vacuum pump of Figure 1), as well as the use of isolation valves between one or more of the other components and control of trap temperatures within the trapping system, would have been obvious for the purpose of achieving efficient trapping and recovery of waste materials for recycling, and subsequent repairing and/or replacing of one or more of the cold traps, the hot trap, the vacuum pump, or the process chamber, respectively (Schmitt et al.; abstract; column 2, lines 11-25; column 6, lines 1-67; and column 7, lines 1-42).

5. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitt et al. (US 6,099,649) in view of Kumada et al. (US 5,405,445).

Schmitt et al. disclose and/or suggest the elements of claim 1 above. Schmitt et al. do not specifically disclose the use of a bias voltage and a catalyst.

However, Kumada et al. disclose a vacuum extraction system for a chemical vapor deposition (CVD) reactor vessel with a trapping device, in which the CVD apparatus 12 includes a reactor vessel 14 having first and second electrodes (16,18) through which an RF bias voltage is applied to cause a discharge therebetween (at a desired value and/or polarity depending on the amount of deposition and material of the substrate), while the system includes a trapping device 28 having a perforated tube member 78 that supplies a gaseous oxidizing agent (catalyst) of oxygen, water etc., such that active species formed by the discharge are deposited as a thin film in controlled amounts on the substrate, and to form oxides of deposition components, including oxides of silicon and titanium (abstract; column 1, lines 9-16 and 67-68; column 2, lines 1-68; column 3, lines 16-68; column 4, lines 1-68; column 5, lines 1-39; and Figures 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the chemical vapor deposition trapping system for unreacted precursor conversion and effluent removal, as disclosed/suggested by Schmitt et al., by using the RF bias voltage and oxidizing agent catalyst, as taught by Kumada et al., in order to form active species via the RF discharge voltage for depositing as a thin film in controlled amounts on the substrate, and to form oxides of deposition components, including oxides of silicon and titanium, respectively (Kumada et al.; abstract; column 3, lines 25-49; column 4, lines 60-68; and column 5, lines 1-39).

***Allowable Subject Matter***

6. Claims 3, 9, 18, 19, 21, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach or suggest high pressure chemical vapor trapping systems that include the trapping arrangements of independent claims 1 and 15, and further including first and second cold traps, with the second cold trap operatively connected with and positioned downstream of the first cold trap (dependent claims 3 and 18).

***Terminal Disclaimer***

8. The terminal disclaimer filed on September 3, 2004 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any patent granted on co-pending US Application Serial No. 09/589,633 has been reviewed and is accepted. The terminal disclaimer has been recorded.

***Response to Arguments***

9. The examiner acknowledges the applicant's amendment filed with new drawings and an Information Disclosure Statement, all of which were received by the USPTO on

June 28, 2004. The IDS has been considered, and an initialed copy has been enclosed with this Office Action. New objections to the specification and claims have been raised by the applicant's amendments (see paragraphs 1 and 2 above). The applicant's amendments/remarks overcome all prior art rejections based on Varrin, Jr. et al. (US 5,015,503). Although an improper terminal disclaimer was filed on August 11, 2004, the applicant's 2<sup>nd</sup> terminal disclaimer filed September 3, 2004 has been reviewed and accepted. The applicant has cancelled claim 14, while adding new claims 15-24. Claims 1-13 and 15-24 are currently under consideration in the application.

10. Applicant's arguments with respect to claims 1-13 and 15-24 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns 9/18/04*  
Examiner  
Art Unit 1725

*KPK*  
kpk  
September 18, 2004